

Plaintiffs' Exhibit 16 (Redacted)

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA

Civil Action No: 1:23-cv-00108-LMB-JFA

UNITED STATES, et al.,

Plaintiffs,

v.

GOOGLE LLC,

Defendant.

CONFIDENTIAL VIDEOTAPED DEPOSITION OF TIM CRAYCROFT

August 15, 2023

Page 25

1 director of something in ads. Targeting, I think it
2 was called, just director of targeting. When I left,
3 I was vice president of multichannel advertising.

4 **Q. Does "director of display advertising**
5 **platform" sound familiar?**

6 A. Yes.

7 **Q. Was that the position that you had**
8 **prior to being vice president of multichannel**
9 **advertising?**

10 **Excuse me.**

11 A. Yeah. The evolution was targeting,
12 display, multichannel advertising. Some of these
13 are -- MCA's just the name for a bunch of other
14 stuff.

15 **Q. At the time you left Amazon, how much**
16 **were you making a year?**

17 A. In the \$2 million range, 2 to 3,
18 depending on the stock price.

19 **Q. Is that broken down by salary and stock**
20 **options?**

21 A. That's total.

22 **Q. Total compensation?**

23 A. Amazon -- yeah.

24 **Q. Could you break that down to salary**
25 **versus stock options?**

Page 26

1 [REDACTED]
2 [REDACTED]
3 [REDACTED]
4 [REDACTED]

5 **Q. Where'd you go next after Amazon?**

6 A. I went to a company called Checkr,
7 C-h-e-c-k-r.

8 **Q. What was your role there at Checkr?**

9 A. Chief product officer.

10 **Q. What product did you oversee, or**
11 **products, plural?**

12 A. Checkr's core business is background
13 checks, using software to automate all the background
14 check process.

15 **Q. If I understand, someone applies for a**
16 **job, then that company would have Checkr run the**
17 [REDACTED]
18 **right?**

19 A. That's correct.

20 **Q. What caused you to leave Amazon?**

21 A. I'd been there a long time and was
22 doing a lot of the same things every day. And Checkr
23 called me, and I thought the opportunity to join a
24 small company where we would move faster, be more
25 entrepreneurial, do something different than ads --

Page 27

1 and they were shifting their headquarters here to
2 Denver, so I would be traveling less.

3 **Q. So at the time you worked at Amazon,**
4 **were you still living in the Seattle area? Is that**
5 **where you were living?**

6 A. I moved to Boulder, Colorado, in 2017.
7 So I continued to work for Amazon for two and a half
8 years from Boulder.

9 **Q. After Checkr, then you go to Google?**

10 A. Yeah, I joined Checkr in January of
11 2020. The pandemic started shortly thereafter. That
12 changed the growth prospects of the company and
13 changed the requirements of the role I had taken.

14 So I -- Google called me shortly after
15 I joined Checkr, and after a few months, I decided
16 that I was interested in changing. So I joined
17 Google in September of 2020.

18 **Q. Does Checkr still exist, or did it**
19 **fold?**

20 A. No, it exists.

21 **Q. Do you have any stake in Checkr**
22 **anymore?**

23 A. Excuse me?

24 **Q. Do you have any stake still in Checkr?**

25 A. I do not. I didn't stay long enough to

Page 28

1 invest any equity.

2 **Q. When you first came to Google, what was**
3 **your position?**

4 A. Vice president and general manager of
5 YouTube ads.

6 **Q. Just approximately how long were you in**
7 **that role?**

8 A. I still am responsible for YouTube ads.
9 My role expanded in April of 2021.

10 **Q. And expanded to cover what fields that**
11 **you weren't previously covering?**

12 A. Google Display ads, Google app ads,
13 publisher products, including Google Ad Manager,
14 AdSense, AdMob.

15 **Q. And you are currently in that role?**

16 A. I am currently in that role.

17 **Q. What's your salary at Google?**

18 MS. SESSIONS: I am going to object on
19 relevance grounds.

20 You can answer.

21 A. Salary as in cash or total
22 compensation?

23 **Q. (By Mr. Freeman) Break it down, both,**
24 **for me.**

25 [REDACTED]

Page 29

1 [REDACTED]
2 **Q. Just at a high level, is that a fair**
3 **summary of your career and employment?**
4 **"Yes"?**
5 A. Yes, it is.
6 **Q. Did I miss something?**
7 A. No.
8 **Q. All right. I want to then go back to**
9 **your time at Amazon and start there.**
10 A. Okay.
11 **Q. So when you first got to Amazon, were**
12 **you the director of e-commerce platform product**
13 **group? Does that sound right?**
14 A. I think that's what we renamed the
15 program office to. When I joined, it was called the
16 program office.
17 **Q. Who did you report to in that role?**
18 A. Matt Swann to start.
19 **Q. Did that change at any time while you**
20 **were in that particular role?**
21 A. I had many managers in that role.
22 Would you like me to enumerate them?
23 **Q. Sure, if you remember them.**
24 A. Matt Swann, Charlie Bell, Rick Dalzell,
25 Jason Kilar, Brian Valentine.

Page 30

1 **Q. Sorry. What was that last one?**
2 A. Brian Valentine.
3 **Q. What would have been their title during**
4 **that time frame? Like, you were reporting to what**
5 **position?**
6 A. Matt was a director over -- all the
7 others were vice presidents or senior vice
8 presidents.
9 **Q. Did you have a team that reported to**
10 **you in that role?**
11 A. Yes.
12 **Q. Who were your direct reports?**
13 A. In the early days, they were individual
14 contributor technical program managers, and then over
15 time, managers of technical program managers.
16 **Q. Can you break that down a little bit**
17 **for me?**
18 **When you say "technical program**
19 **managers," can you give me an example of what you**
20 **mean by that or what they were in charge of?**
21 A. I'll use "TPM" for short. TPMs are
22 cross-functional leaders. So in most large
23 companies, especially in a technical environment, you
24 need teams to collaborate on what you're going to
25 build and how you're going to build it.

Page 31

1 And they own all the communication, all
2 the planning, agreement on a technical design across
3 multiple teams. Agreement on a schedule. When the
4 schedule's at risk, figuring out what to do. But
5 it's got a project management component. How are you
6 going to execute?
7 But then it still plays a very
8 significant role. High expectations of TPMs at
9 Amazon to have good technical judgment and technical
10 problem-solving skills.
11 **Q. Can you give me an idea of what product**
12 **they were responsible for that they were then**
13 **bringing to you to report to or you were supervising?**
14 A. We had a wide portfolio of projects.
15 Anything that required many teams at Amazon to agree
16 and execute together.
17 **Q. I guess what I'm trying to get at is:**
18 **I mean, is this in the ad space?**
19 A. Ads at Amazon didn't exist at this
20 time.
21 **Q. Okay. So that's what I'm trying to --**
22 **just, like what general field, were you --**
23 A. This was the e-commerce platform, so
24 this could be launching Amazon's third-party
25 marketplace internationally, where third parties --

Page 32

1 you know, it's commonplace today.
2 Enabling other retailers -- enabling
3 Amazon to run other retailers' websites. That was
4 part of Amazon's business at the time. Like Target
5 used to run on Amazon's platform. Could be as simple
6 as enabling, you know, a new payment method on
7 Amazon.
8 **Q. Were you still writing code during**
9 **this -- this time?**
10 A. I was not.
11 **Q. How would you typically communicate**
12 **with your bosses during that time frame?**
13 **Maybe I can break that down if you**
14 **don't -- did you have standing meetings with them?**
15 A. Certainly had one-on-ones, and then
16 business cadence meetings. Business reviews of
17 particular projects.
18 **Q. And then, of course, email?**
19 A. Yeah.
20 **Q. During this time, did Amazon have what**
21 **I'll call, like, a chat or instant message system**
22 **just amongst Amazon employees?**
23 A. Not that I remember.
24 **Q. Did you have standing meetings with the**
25 **people that directly reported to you?**

Page 33

1 A. Yeah, the same thing. One-on-ones,
2 regular reviews of projects and programs.
3 **Q. And then, of course, email as well?**
4 A. Yes, email.
5 **Q. And your email address at Amazon at**
6 **that time was timcray@amazon.com?**
7 A. That's correct.
8 **Q. So then you got promoted to director of**
9 **display advertising platform; is that right?**
10 A. No, that's not right.
11 **Q. Okay. What was the next job within**
12 **Amazon after e-commerce platform?**
13 A. That was my last job at Amazon before I
14 left in 2007 for -- wait -- 2008, sorry.
15 I left in March-ish 2008 for -- and
16 then returned in June 2009.
17 **Q. Why did you leave in March of 2008?**
18 A. I was recruited to a startup in Silicon
19 Valley.
20 **Q. What startup was that?**
21 A. NING, N-i-n-g.
22 **Q. What was the main product or service**
23 **that NING was providing?**
24 A. It was a platform for building
25 applications in the cloud, and it had one particular

Page 34

1 application, which was effectively social networks
2 for small groups, like a college alumni club or
3 brands. A lot of music, a lot of artists, like -- I
4 still remember 50 Cent and Linkin Park hosted their
5 fan community websites on that platform.
6 It was Marc Andreessen's last company
7 before he became a venture capital investor.
8 **Q. I'm sorry. Could you say that name**
9 **again?**
10 A. Marc Andreessen.
11 **Q. What was your role at NING?**
12 A. I think my title was VP of platform
13 engineering. I forget, exactly. So I led half to
14 two-thirds of the engineering team.
15 **Q. Can you ballpark to me? When you say**
16 **"half to two-thirds," how many? Are we talking**
17 **about, like, 10 engineers? Are we talking about 50**
18 **engineers, 100 engineers?**
19 A. Somewhere between 50 and 100.
20 **Q. So were you writing code at NING?**
21 A. No.
22 **Q. Why'd you leave after a fairly short**
23 **stint at NING?**
24 A. I spent a year there. I joined just as
25 the financial crisis -- I have great timing with

Page 35

1 pandemic and financial crisis in my career moves.
2 So, again, the company's funding,
3 ability to grow, general prospects were very
4 different than when I had joined.
5 **Q. Does NING still exist?**
6 A. I'm not sure. I believe it was bought
7 by somebody at some point, but I haven't kept track.
8 **Q. You don't have any stake still in NING?**
9 A. I do not.
10 **Q. So you leave NING and then you go back**
11 **to Amazon?**
12 A. Yes.
13 **Q. Is that when you go back to -- as the**
14 **director of display advertising platform?**
15 A. Yeah. It wasn't called that when I
16 first started.
17 **Q. What was it called, if you remember?**
18 A. I think I was director of targeting.
19 We didn't have a display platform at that time.
20 **Q. So what was your duties and**
21 **responsibilities as director of targeting?**
22 A. I started out leading product
23 management for Amazon's display ads business with a
24 particular emphasis on targeting, on what today you
25 would call audiences in advertising.

Page 36

1 And then I took on responsibility for
2 engineering.
3 **Q. When you were in director of targeting,**
4 **were you writing code at that time?**
5 A. No.
6 **Q. Maybe we can short-circuit this. Have**
7 **you ever wrote code from this point moving forward?**
8 A. Not professionally.
9 **Q. When you were director of targeting,**
10 **who did you report to at Amazon?**
11 A. I reported, at first, to Toni Reid,
12 T-o-n-i R-e-i-d, who ran the ad business for Amazon
13 at the time.
14 **Q. What was Toni Reid's position at**
15 **Amazon?**
16 A. Director of advertising.
17 **Q. Were there other groups or directors**
18 **that were reporting to Toni at the time that you were**
19 **reporting to Toni?**
20 A. Yes.
21 **Q. What I'm trying to get at is: What was**
22 **Toni Reid's umbrella? What were all the things**
23 **underneath?**
24 A. I don't remember exactly, but account
25 management was originally one of the functions --

<p style="text-align: right;">Page 37</p> <p>1 other functions she owned.</p> <p>2 Q. Who reported to you during this time</p> <p>3 frame?</p> <p>4 A. I don't remember in detail. I had a</p> <p>5 bunch of individual product managers to start. And</p> <p>6 then a handful of individual engineers and an</p> <p>7 engineering manager. It was a long time ago. I</p> <p>8 don't remember much more than that.</p> <p>9 Q. Even without names, do you remember any</p> <p>10 particular products or things like that that they</p> <p>11 were reporting to you at that time?</p> <p>12 A. The key -- right out of the gate, the</p> <p>13 key thing we were working on was enabling our account</p> <p>14 managers to build audiences, right, for an advertiser</p> <p>15 to express the type of consumer they wanted to reach,</p> <p>16 and then to use -- obviously, Amazon has a tremendous</p> <p>17 dataset of what people are shopping for and buying.</p> <p>18 So that could range from people who are</p> <p>19 actively trying to buy a television, as an example,</p> <p>20 to people who -- more in terms of long-term behavior.</p> <p>21 You know, people who buy a lot of luxury goods, or</p> <p>22 people who seem to have become new parents based on</p> <p>23 their purchasing patterns.</p> <p>24 So we were building tools to construct</p> <p>25 those audiences.</p>	<p style="text-align: right;">Page 39</p> <p>1 Q. Is it fair to say this job that we're</p> <p>2 talking about now, at Amazon, was your first job</p> <p>3 dealing with web advertising?</p> <p>4 A. Yes. At the very end of NING, we were</p> <p>5 starting to sketch out advertising support for the</p> <p>6 social network, the group sites that were built on</p> <p>7 the platform. So I had -- you know, we had hired</p> <p>8 someone from an ad tech company. I don't remember</p> <p>9 who it was or where they came from.</p> <p>10 So I had started to get familiar with</p> <p>11 some very basic concepts. This was the first time I</p> <p>12 had built anything.</p> <p>13 Q. Just to make sure I have the timeline</p> <p>14 right, when you're talking about the end of NING or</p> <p>15 being back at Amazon for your second run, this would</p> <p>16 have been in 2009?</p> <p>17 A. Correct.</p> <p>18 Q. I kind of want to move to the -- kind</p> <p>19 of, like, the status of online advertising when you</p> <p>20 first entered this field in 2009, okay?</p> <p>21 So, like, how did you get familiar with</p> <p>22 the products and kind of the landscape of web</p> <p>23 advertising?</p> <p>24 MS. SESSIONS: Object to the form.</p> <p>25 A. How did I get familiar with it?</p>
<p style="text-align: right;">Page 38</p> <p>1 Q. Was this advertising on what I'll call</p> <p>2 Amazon owned-and-operated websites?</p> <p>3 A. At the time it was, yes.</p> <p>4 Q. Meaning that this did not apply, this</p> <p>5 particular time, to third-party websites; is that</p> <p>6 right?</p> <p>7 That were not owned and operated by</p> <p>8 Amazon?</p> <p>9 A. Correct. It included Amazon.com, IMDb,</p> <p>10 DPREview, which was a camera review site that we</p> <p>11 owned.</p> <p>12 I think that was it.</p> <p>13 Q. Back to my questions I kind of asked</p> <p>14 you before in terms of how did you regularly</p> <p>15 communicate with your boss during this time frame?</p> <p>16 Like, standing meetings?</p> <p>17 A. Yes, standing meetings.</p> <p>18 Q. Email?</p> <p>19 A. Yes, email.</p> <p>20 Q. And your email was the same even</p> <p>21 from -- even though you left for a period of time?</p> <p>22 When you came back --</p> <p>23 A. Yes.</p> <p>24 Q. -- it was timcray@amazon?</p> <p>25 A. timcray@amazon.</p>	<p style="text-align: right;">Page 40</p> <p>1 Talking to customers. Using the</p> <p>2 products. Talking to my team. Reading trade press.</p> <p>3 Q. (By Mr. Freeman) And what kind of trade</p> <p>4 press would you read, if you remember?</p> <p>5 A. Back then, I don't remember. Adweek.</p> <p>6 I can rattle off a bunch of trade press names, but I</p> <p>7 don't know if they were the ones that were relevant</p> <p>8 at the time.</p> <p>9 Q. So at that time, you thought that they</p> <p>10 were relatively reliable sources in this field?</p> <p>11 MS. SESSIONS: Object to the form.</p> <p>12 A. They were just sources of information</p> <p>13 or perspective, not necessarily reliable.</p> <p>14 Q. (By Mr. Freeman) So at the time you</p> <p>15 entered web advertising in 2009, did Amazon have a</p> <p>16 publisher ad server product at that time?</p> <p>17 A. No.</p> <p>18 Q. Do you know who -- what other companies</p> <p>19 had publisher ad servers in 2009?</p> <p>20 A. I know at least Google and 20 -- I</p> <p>21 think it was called 24/7 at the time, 24/7 Real</p> <p>22 Media.</p> <p>23 And there are a couple others whose</p> <p>24 name I can't remember.</p> <p>25 Q. Who had the largest share of the market</p>

Page 41

1 in 2009 for publisher ad servers?
2 MS. SESSIONS: Object to the form.
3 A. I don't know.
4 **Q. (By Mr. Freeman) Are you familiar with**
5 **the -- Google's product, what we commonly call DFP?**
6 A. Yes, I am.
7 **Q. All right. When did you first become**
8 **familiar with -- DoubleClick for Publishers, right?**
9 **That's what it stands for?**
10 A. Yes, that's what it stands for. I
11 first became familiar with it right as I started with
12 Amazon in the ad business, because Amazon used DFP at
13 that time.
14 **Q. Do you know where the term "DFP" comes**
15 **from?**
16 A. (No response.)
17 **Q. What I mean --**
18 A. I don't --
19 **Q. -- by that, do you know that Google**
20 **bought DoubleClick?**
21 A. Yes, I know Google bought DoubleClick.
22 **Q. Were you at Google at the time that**
23 **they bought DoubleClick?**
24 A. No, I was not at Google at that time.
25 **Q. Then how did you -- did you become**

Page 42

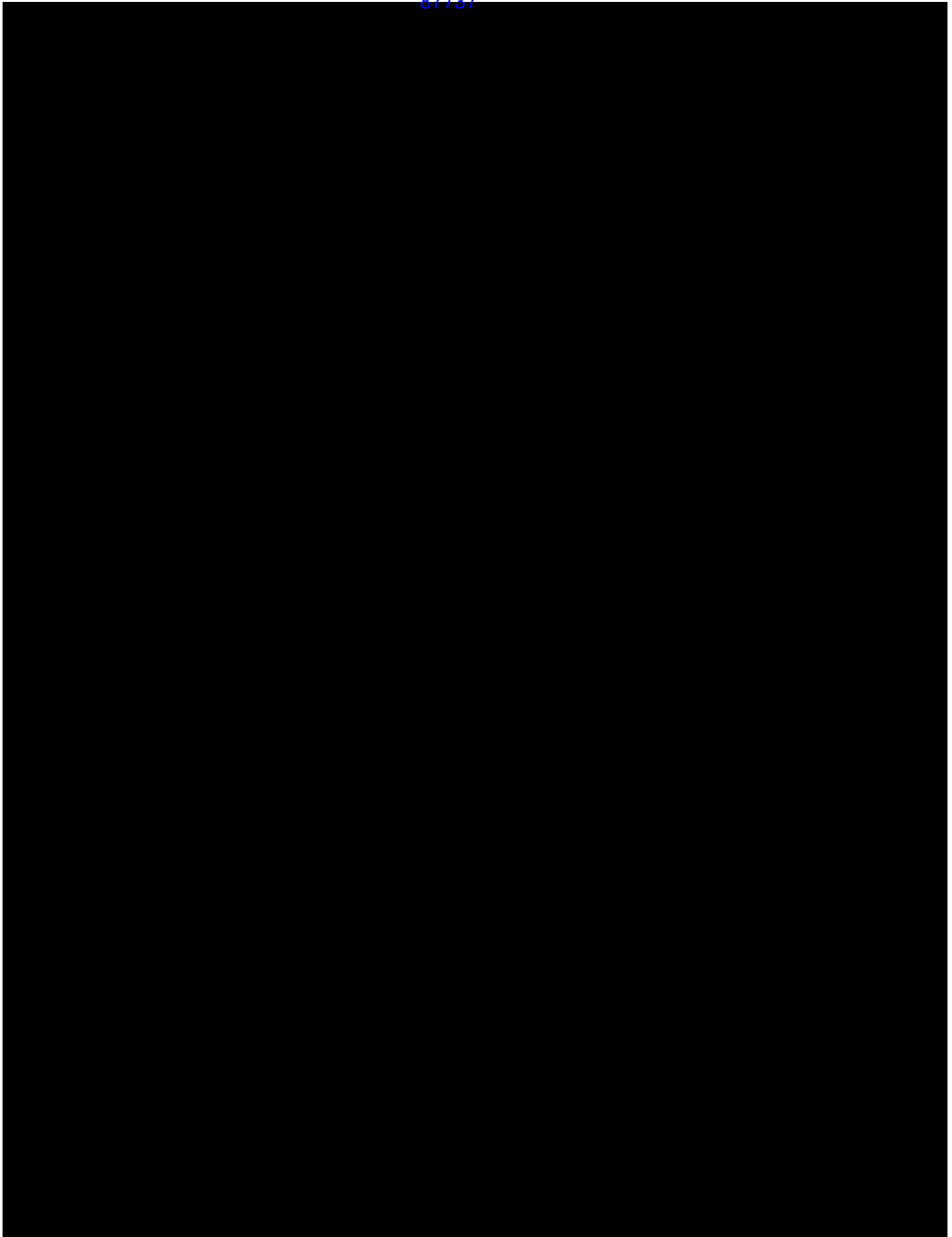
1 familiar with DFP while you were still at Amazon?
2 A. Yes, I did.
3 **Q. How did you become familiar with it**
4 **even though you were working at Amazon?**
5 A. We used the product.
6 **Q. Is it fair to say you were a client or**
7 **customer --**
8 A. We were a customer --
9 **Q. -- of DFP?**
10 A. -- of the product.
11 **Q. At the time you started back at Amazon**
12 **in 2009, what were some of the ad exchange products**
13 **on the market?**
14 A. I don't know the full history of ad
15 exchanges. I'm not sure any existed at that time.
16 The early ones were Right Media
17 Exchange, which Yahoo bought, and the original
18 version of DoubleClick or Google Ad Exchange. I'm
19 not sure if that was first created at DoubleClick or
20 at Google. I don't know the history.
21 But, again, in -- I don't know that
22 they existed in 2009. I don't know the exact dates.
23 **Q. Are you familiar with the -- the term**
24 **or phrase "AdX"?**
25 A. Yes.

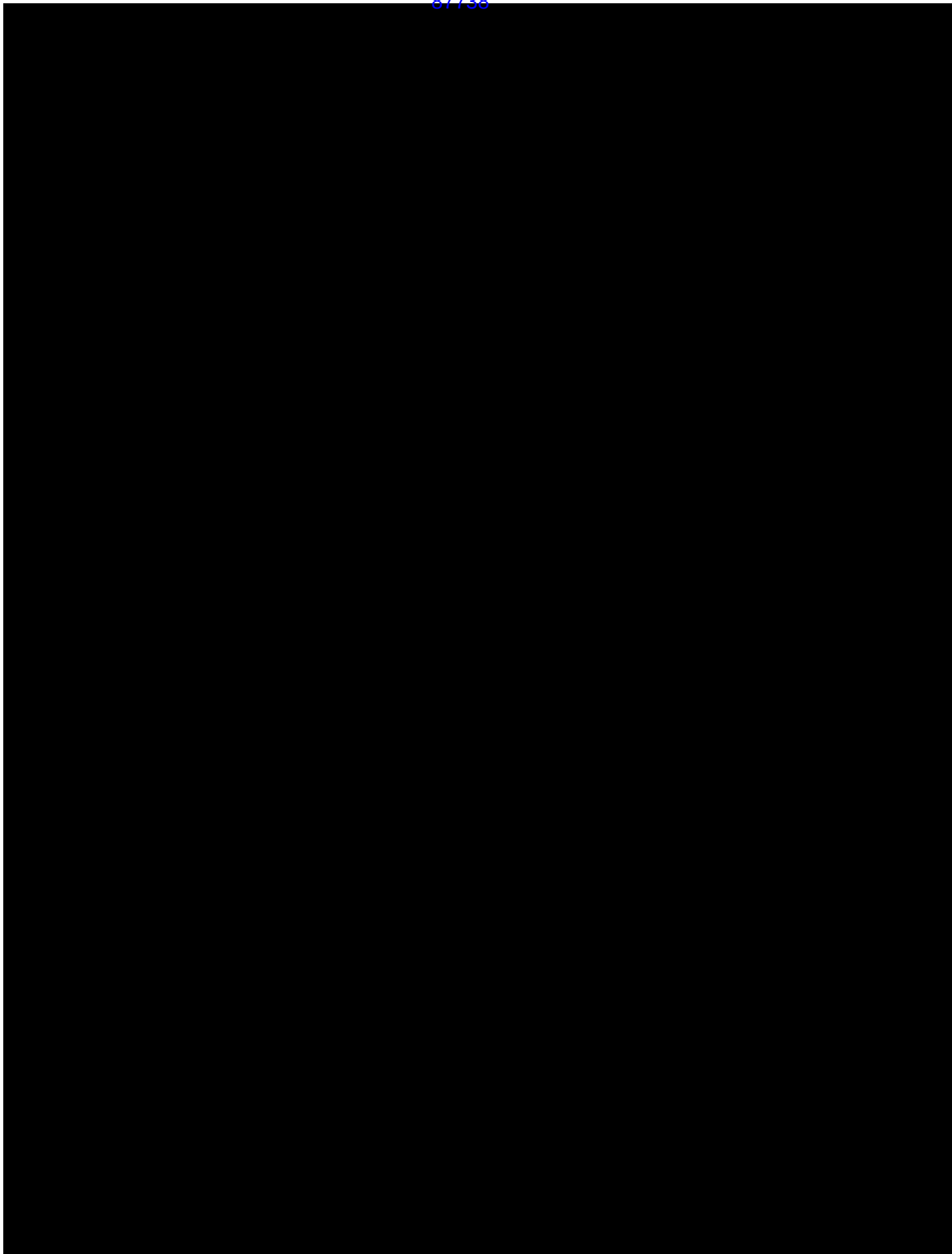
Page 43

1 **Q. And what -- is AdX, from its inception,**
2 **then, an ad exchange?**
3 MS. SESSIONS: Object to the form.
4 A. I wasn't familiar with it at its
5 inception, so I can't say "yes" or "no."
6 **Q. (By Mr. Freeman) Then moving on to your**
7 **other roles at Amazon.**
8 **You get promoted to vice president of**
9 **multichannel advertising; is that right?**
10 A. I think, at the time, it was VP of --
11 probably of display ads. I don't remember the exact
12 title.
13 **Q. What was different about that role from**
14 **your role --**
15 A. Nothing.
16 **Q. -- that started --**
17 A. Nothing. Just a title change.
18 **Q. So no duties and responsibilities**
19 **changed?**
20 A. Yeah. My mom said, Congrats on your
21 new responsibilities. I said, Mom, nothing's
22 changed. This isn't General Electric.
23 **Q. So was this part of, like, a**
24 **reorientation at Amazon?**
25 A. No. Just a recognition of leadership

Page 44

1 and impact, I guess.
2 **Q. Did it come with increased salary?**
3 A. Sure.
4 **Q. Increased salary, not increased role;**
5 **is that fair?**
6 A. Correct.
7 **Q. So in -- this is now, right, in 2012,**
8 **right, roughly?**
9 A. I think, yeah. Sounds right.
10 **Q. And are you, then, becoming familiar**
11 **with how ad auctions are run?**
12 A. Yes.
13 **Q. Okay. Explain to me what was your**
14 **understanding of how, specifically, AdX ran auctions?**
15 MS. SESSIONS: Object to the form.
16 A. I don't remember the timelines. So
17 independent of 2012, when we first started using AdX
18 as a source of inventory for our DSP -- I don't
19 remember when we launched our DSP -- I don't think we
20 thought much about the auction. Just assumed it was
21 a second-price auction.
22 **Q. (By Mr. Freeman) What is a second-price**
23 **auction?**
24 A. The ad exchange collects bids from all
25 interested buyers, sorts them in descending order,





Page 133

1 A. Changes over time, so...

2 **Q. Was there a particular group that**

3 **demands more of your time than another?**

4 A. No. It depends on the interesting

5 subjects of the day.

6 In terms of regular business cadence of

7 staying connected with the team, reviewing the

8 business, that's pretty equal across everything.

9 And then it's more ad hoc based on the

10 needs of the teams.

11 **Q. I know we talked about Quarter 2 2021**

12 **alone. Has Google Display ads continued to grow even**

13 **after Quarter 2 of 2021?**

14 A. If I recall, yes, through the rest of

15 2021 and some of 2022.

16 These numbers are much higher than --

17 growth now, because this -- remember what was

18 happening in -- these are year-over-year numbers, and

19 remember what was happening in the world Q2 2020? So

20 these are comparing to big drops the prior year.

21 So these growth rates are not

22 reflective of what's normal for the Display business.

23 The Display business this year is

24 declining modestly year over year.

25 **Q. What do you attribute that to?**

Page 134

1 A. Tough economy. Less growth in

2 post-COVID of consumer digital behavior. During

3 COVID, everyone went online, spent a lot more time

4 online. So the supply side has stopped growing as

5 well at the rate that it did during COVID.

6 **Q. Has there been a change in consumer**

7 **behavior, meaning transitioning more to phone or**

8 **video?**

9 A. Yeah --

10 MS. SESSIONS: Object to the form.

11 A. Yeah. We certainly see continued user

12 attention spent more in apps than on the web.

13 **Q. (By Mr. Freeman) Who is DFP's largest**

14 **competitor today?**

15 A. In what domain?

16 **Q. In SSPs for web display.**

17 A. For SSPs, it's the same list that we've

18 gone over a few times. There's no one that stands

19 out because, as a web publisher, you can use many

20 SSPs together.

21 Most publishers use most, if not all,

22 of them.

23 **Q. Now that you're at Google and DFP's**

24 **under your scope, do you have an idea of market**

25 **share?**

Page 135

1 A. I haven't seen any data.

2 **Q. Even without seeing data, has anyone**

3 **just told you the --**

4 A. No.

5 **Q. -- market share?**

6 A. No.

7 **Q. Does Google monitor their market share**

8 **in DFP?**

9 A. Not that I've seen. Doesn't mean it

10 doesn't happen.

11 **Q. What is -- what are some of the DFP**

12 **competitors for PASs?**

13 A. PAS is what? Clarify the question.

14 **Q. Which is -- which is Amazon -- I'm**

15 **sorry -- publisher ad servers.**

16 MS. SESSIONS: I'm sorry. Can you just

17 ask that full question again, please?

18 **Q. (By Mr. Freeman) What are some of**

19 **the -- what are some of DFP's competitors for**

20 **publisher ad servers?**

21 A. In web, it's still AppNexus. I'd have

22 a -- speaking from a North American lens. There are

23 a bunch of other names I don't remember in Europe.

24 And on video, FreeWheel, Magnite. And in mobile, ad

25 serving patterns look very different in mobile, and

Page 136

1 it's another set of competitors.

2 AppLovin, ironSource, Unity.

3 (The Stenographer interjected to

4 protect the integrity of the record.)

5 A. AppLovin, A-p-p-L-o-v-i-n, ironSource,

6 Unity.

7 **Q. (By Mr. Freeman) Since you've been at**

8 **Google, to your knowledge, has Amazon developed and**

9 **implemented a AdX competitor?**

10 A. AdX, not DFP?

11 **Q. Correct.**

12 A. No.

13 There are -- anyway, there -- there are

14 many public job listings, even in the press

15 yesterday, for Amazon investing in building some sort

16 of publisher ad infrastructure. But I don't know

17 exactly what it is.

18 **Q. Your information now about what Amazon**

19 **is doing is just publicly related information?**

20 A. Yep.

21 **Q. Do you remember particularly what**

22 **source that was that you read?**

23 A. It was just -- it was in trade press.

24 I don't know which one, but it's all just links to

25 the Amazon job site.

Page 137

1 **Q. Now that you're at Google, do you know**
2 **why Google acquired DoubleClick?**
3 A. No one's ever told me specifically, but
4 Google wasn't really in the display business back
5 then. So presumably, it was to expand into the
6 display business.
7 **Q. Do you know how the price that they**
8 **agreed on was reached?**
9 A. No idea.
10 **Q. I know we talked about this, I think,**
11 **in the morning, about -- about last look.**
12 **Are you aware of whether Google ever**
13 **implemented last look?**
14 A. Nope.
15 **Q. Are you familiar with the term Admeld,**
16 **meaning A-d-m-e-l-d?**
17 A. It was a company, I believe, that
18 Google acquired.
19 **Q. Do you know why they acquired them?**
20 A. I don't remember.
21 **Q. Did that predate your time there?**
22 A. Yeah.
23 **Q. Do you know the term or project,**
24 **Project Bell, B-e-l-l?**
25 A. No, I don't.

Page 138

1 **Q. What about Project Poirot, meaning**
2 **P-o-i-r-o-t?**
3 A. I know I've seen that name. I don't
4 know what it means, though.
5 **Q. Do you know the phrase "dynamic**
6 **allocation"?**
7 A. Yes.
8 **Q. What's your understanding of dynamic**
9 **allocation?**
10 A. I explained this in our prior session.
11 Large publishers monetize through a mix of direct
12 sold and then indirect demand that comes in through
13 the exchange.
14 The direct sold demand is typically a
15 contract to deliver a certain amount -- number of
16 impressions at a certain price.
17 Quite often, you'll have indirect
18 demand coming in from the exchange that's bidding
19 higher than those contracted fixed prices. And there
20 will be cases where you will choose to serve the
21 lower-priced ad that was contractually committed
22 because it's contractually committed to deliver a
23 certain amount by a certain date, even though, if you
24 were to ignore that, the publisher could make more
25 money by letting in an ad from the exchange.

Page 139

1 There's a concept called pacing and
2 you -- for those direct sold demands that are
3 contractually committed, the ad server -- it says,
4 I've got a week to deliver a million impressions.
5 The advertiser wants them to deliver smoothly by day.
6 They don't want me to deliver seven days of
7 impressions in one day. They want to spread them out
8 evenly. So the ad server's keeping track of that.
9 And if something's under-pacing, so
10 we're behind schedule in delivering on that
11 contractual commitment, that potentially lower price
12 contracted fixed-price ad may serve instead of the
13 higher-priced ad that comes in from the exchange.
14 That's the dynamic allocation, rather
15 than a simple sorting of prices.
16 **Q. Are you familiar with the term**
17 **"realtime bidding"?**
18 A. Yes.
19 **Q. What does that mean?**
20 A. Realtime bidding is how ad exchanges
21 offer up the opportunity for many -- multiple buying
22 platforms, tens or hundreds, commonly, on every
23 single potential impression to bid for a potential
24 impression on a publisher website or app.
25 **Q. And I think you mentioned this in the**

Page 140

1 **morning, but was there a period of time where**
2 **auctions were done by what was commonly referred to**
3 **as "waterfall"?**
4 A. Yes.
5 **Q. Can you describe to me the difference**
6 **between realtime bidding versus waterfall?**
7 A. Realtime bidding is letting multiple
8 demand sources, many DSPs, and then the many, many
9 advertisers using those DSPs -- so it's hundreds,
10 thousands of advertisers -- to compete in parallel
11 for a given impression.
12 Whereas a waterfall is -- you would
13 take each demand source -- in the pre-DSP days, it
14 would be an ad network that had aggregated advertiser
15 demand -- and you would put them in the order you
16 think would -- who would most often pay the most for
17 ad impressions, and then the next most, the next
18 most.
19 And so if ad network A that you
20 scheduled first in mediation couldn't fill an ad
21 impression, the waterfall goes to the next one and
22 goes to the next one. And the art and science of
23 that is learning what order to put them in.
24 **Q. Is waterfall still implemented today?**
25 A. I'm not aware of it in the web.

Page 169

1 And there's still, you know, a chunk of
2 the business which is just people paying for clicks
3 and managing on ROI on their own. But the fastest
4 growing and the majority of the spend is constrained
5 by these performance objectives.
6 **Q. Who are some of your largest customers**
7 **of Google ads -- Google Display ads?**
8 A. I don't know the top ten, but go down
9 the list of the largest advertisers in the world or
10 the country and you're just going to see the same.
11 It's the big CPG companies. It's the big retailers.
12 It's the big telecom, big media and entertainment
13 companies. It's easier to talk about it as verticals
14 rather than specific advertisers.
15 **Q. What's the difference between DV360 and**
16 **Google Display ads?**
17 MS. SESSIONS: Object to the form.
18 A. Typically, different advertisers or
19 different budgets within advertisers.
20 As I said, DV 3 is for more
21 sophisticated advertisers where they're delegating to
22 the agency. The agency is there to add their own
23 value in terms of the art and science of optimizing
24 for the advertiser's marketing objectives.
25 With GDA, Google Display ads,

Page 170

1 increasingly, advertisers give more control to
2 Google's systems to -- through an automated process
3 to achieve their marketing objectives. So it's
4 machines versus humans. DV 3 is still a product for
5 high-end advertisers that have practitioners that are
6 specialists in programmatic advertising, figuring out
7 what ads -- what sites to run on, what to bid, how to
8 measure success.
9 GDA is a simpler product that scales to
10 a much wider range of less sophisticated advertisers
11 where -- you know, in oversimplified terms, you give
12 it a bid and a budget and a marketing objective, and
13 it does the rest.
14 MR. FREEMAN: That's all we have for
15 you today. Thank you.
16 THE DEPONENT: Okay.
17 MS. SESSIONS: I just have one
18 follow-up question --
19 THE DEPONENT: Shoot.
20 MS. SESSIONS: -- for you.
21 EXAMINATION
22 BY MS. SESSIONS:
23 **Q. Do large sophisticated advertisers use**
24 **Google Display ads?**
25 A. Yes, they use both.

Page 171

1 MS. SESSIONS: I have no additional
2 questions.
3 We would like to mark the transcript as
4 highly confidential pursuant to the protective order,
5 and we would like to read and sign, please.
6 MR. FREEMAN: Okay.
7 THE VIDEOGRAPHER: Going off the record
8 at 2:47. This marks the end of Media 4 of 4.
9 The foregoing deposition was concluded
10 at the hour of 2:47 p.m. Total time on the record
11 was 3 hours and 46 minutes.
12
13
14
15
16
17
18
19
20
21
22
23
24
25

Page 172

1 I, Tim Craycroft, the deponent in the
2 above deposition, do hereby acknowledge that I have
3 read the foregoing transcript of my testimony, and
4 state under oath that it, together with any attached
5 Amendment to Deposition pages, constitutes my sworn
6 testimony.
7
8 _____ I have made changes to my deposition
9 _____ I have NOT made any changes to my deposition
10
11
12 _____
13 Tim Craycroft
14
15 Subscribed and sworn to before me this____
16 day of _____, 20____.
17
18 My Commission expires: _____
19
20 _____
21 Notary Public
22
23 _____
24 Address
25

REPORTER'S CERTIFICATE

1
2
3 I, Matthew R. Moss, a Registered Professional
4 Reporter, Federal Certified Realtime Reporter, and
5 Notary Public within and for the State of Colorado,
6 commissioned to administer oaths, do hereby certify
7 that previous to the commencement of the examination,
8 the witness was duly sworn by me to testify the truth
9 in relation to matters in controversy between the said
10 parties; that the said deposition was taken in
11 stenotype by me at the time and place aforesaid and
12 was thereafter reduced to typewritten form by me; and
13 that the foregoing is a true and correct transcript of
14 my stenotype notes thereof.

15 That I am not an attorney nor counsel nor
16 in any way connected with any attorney or counsel for
17 any of the parties to said action nor otherwise
18 interested in the outcome of this action.

19 My commission expires: April 28, 2025.

20 *Matthew Moss*
21

22 MATTHEW R. MOSS
23 Registered Professional Reporter
24 Federal Certified Realtime Reporter
25 and Notary Public

HIGHLY CONFIDENTIAL

ERRATA SHEET FOR THE TRANSCRIPT OF TIM CRAYCROFT

Case Name: In Re: Google Antitrust Investigation

Dep. Date: August 15, 2023

Deponent: Tim Craycroft

Page	Line	Correction	Reason for Correction
7	9	Change “Perry” to “Parrott”	Transcription error
7	13	Change “Perry” to “Parrott”	Transcription error
10	2	Change “you know,” to “no”	Transcription error
20	10	Change “CFO” to “CEO”	Transcription error
22	10	Change “been working on for three” to “worked on for four”	Transcription error
28	1	Change “invest any equity” to “vest any equity”	Transcription error
35	19	Change “display platform” to “display ad platform”	Transcription error
46	23	Change “enters those ad” to “enters, manages those ad”	Transcription error
47	25	Change “for” to “or”	Transcription error
48	12	Change “Just” to “it was”	Transcription error
50	16	Change “looking for” to “trying to find”	Transcription error
50	17	Change “It’s also complex” to “Header Bidding is also very complex”	Transcription error
53	5	Change “one” to “once”	Transcription error
53	6	Change “hands, know” to “hands, to know”	Transcription error
53	11	Change “I remember her role” to “I don’t remember her role”	Transcription error
53	12	Change “the business” to “business”	Transcription error
56	4	Change “not of the” to “not the”	Transcription error
56	20	Change “Incident level data” to “ That’s event level data.”	Transcription error

HIGHLY CONFIDENTIAL

Page	Line	Correction	Reason for Correction
58	2	Change "(Witness nods head.)" to "(Witness nods head no.)"	
61	1	Change "that one, but we" to "that, I remember some of those discussions, but we"	Transcription error
63	2	Change "still separate" to "still ultimately separate"	Transcription error
64	12	Change "Perry" to "Parrott"	Transcription error
71	7	Change "clarification to" to "clarification for"	Transcription error
71	11	Change "Mr. Perry" to "Mr. Parrott"	Transcription error
71	22	Change "The Bates number is" to "I'm sorry, it was the wrong Bates number. The Bates number is"	Transcription error
76	19	Change "discuss" to "discussed"	Transcription error
77	3	Change "internet, fast internet" to "internet, you know, fast internet"	Transcription error
78	25	Change "the deposition" to "this portion of the deposition"	Transcription error
79	7	Change "That's right." to "Yes, that's right."	Transcription error
80	5	Change "making for" to "making to"	Transcription error
91	12	Change "companies" to "companies named,"	Transcription error
91	16	Change "Go one" to "I guess, go one"	Transcription error
92	23	Change "Who are" to "And who is -- who are"	Transcription error
93	3	Change "sure"" to "sure.' Is that right?"	Transcription error
98	23	Change "funnel" to "the funnel"	Transcription error
99	6	Change "product exists" to "product is available -- exists"	Transcription error
99	7	Change "a cool" to "a new model of a"	Transcription error

HIGHLY CONFIDENTIAL

Page	Line	Correction	Reason for Correction
		cool”	
99	12	Change “showing that you’re” to “show that you’ve got -- that you’re”	Transcription error
101	23	Change “I’ve” to “We’ve”	Transcription error
104	16	Change “mechanical” to “mechanically”	Transcription error
104	21	Change “auction” to “auctions”	Transcription error
104	22	Change “RTD” to “RTB”	Transcription error
109	22	Change “that” to “the”	Transcription error
112	2	Change “medium” to “media”	Transcription error
112	24	Change “resum?” to “resume”	Transcription error
112, 113	25-1	Change “get our hands on” to “hire at Amazon”	Transcription error
114	16	Change “single option” to “single auction”	Transcription error
115	6	Change “direct” to “dynamic”	Transcription error
115	13	Change “most” to “more”	Transcription error
115	15	Change “on” to “for”	Transcription error
120	12	Change “leaving” to “leading”	Transcription error
120	18-19	Change “you two” to “YouTube”	Transcription error
121	13	Change “gmail” to “google”	Transcription error
126	5	Change “of” to “at”	Transcription error
143	1	Change “know” to “lead”	Transcription error
143	20	Change “I” to “I don’t”	Transcription error
160	6	Change “define” to “explain”	Transcription error
160	20	Change “as well as” to “as well as things like”	Transcription error
168	24	Change “T-row” to “tROAS”	Transcription error
169	3	Change “on” to “to”	Transcription error

HIGHLY CONFIDENTIAL

I have inspected and read my deposition and have listed all changes and corrections above, along with my reasons therefore.

Date: 9/8/23

Signature: 